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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/413,384	10/06/1999	WILLIAM R. WHEAT	31223-74058	1958

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EXAMINER
JACKSON, MONIQUE R

ART UNIT	PAPER NUMBER
1773	13

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/413,384	Applicant(s) WHEAT ET AL.
	Examiner Monique R Jackson	Art Unit 1773

-- The MAILING DATE of this communication appears on the c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,6-12 and 27-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-12 and 27-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The amendment filed 7/10/02 has been entered. Claims 1-2, 4, 6-12 and 27-32 are pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 11-12 and 29-30 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Amended claim 1, from which the above cited claims depend, recite "a multi-layer biaxially oriented polyolefin film," hence the limitations "oriented in at least one direction" (Claim 11), "biaxially oriented" (Claims 12 and 30) and "at least uni-axially oriented" (Claim 30) do not further limitation the subject matter of amended claim 1.

Claim Rejections - 35 USC § 102

4. Claims 1-2, 4, 6-12, and 27-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Isaka et al (USPN 4,230,676.) As stated in the prior office action, Isaka et al teach a heat sealable laminated propylene polymer packaging material having excellent heat seal packaging properties comprising (A) a base layer consisting of a biaxially stretched film made of a polymer composition comprising a propylene polymer and (B) a surface layer consisting of a uniaxially or biaxially stretched film made of a polymeric blend comprising olefin copolymers provided on at least one surface of the base layer or both surfaces of the base layer; wherein the thickness of the

film is 5 to 150 microns with the total thickness of surface layers (B) comprising 0.2 to 50% of the packaging material thickness, with each surface layer preferably 0.7 to 10 microns (*which reads on the limitations of instant claims 2 and 9*; Col. 6, lines 34-44; Col. 8, lines 33-59.) Isaka et al teach that the propylene polymer for the base layer (A) is a polymer mainly comprising propylene and having a melting point of 140°C, or higher, preferably 150°C or higher with specific examples thereof including isotactic polypropylene with an isotactic index of 85% by weight or higher or a copolymer of ethylene and propylene having an ethylene content of 7% by weight or lower, and specifically teach an example utilizing isotactic polypropylene with an ethylene content of 0.5% which is within the range as instantly claimed (Col. 3, lines 5-24; Examples, particularly Example 10.) Isaka et al specifically teach that the packaging film can be produced by coextruding the surface layer(s) to the propylene core and then biaxially orienting the resulting composite film (Col. 8, line 55-Col. 9, line 41; Examples.) Therefore, Isaka et al clearly teach biaxially orienting a coextruded film wherein the film comprises a core layer formed of isotactic propylene polymer including copolymers of propylene with ethylene in a content of 7% by weight or less ethylene, which encompasses the instantly claimed range and therefore reads on less than 1 weight percent as well as the other ranges instantly claimed, and surface layer(s) made of ethylene propylene copolymer which is a thermoplastic material which is "capable" of forming a heat seal with a thermoplastic polymer. With regards to the limitation "ethylene in an amount of no more than one weight percent **which is effective to provide an inter-layer bond strength with said surface layer...**" the Examiner takes the position that this limitation is met by the Isaka et al teaching of a copolymer of ethylene and propylene having an ethylene content of 7% by weight or lower as discussed above, wherein the recitations with

regards to the particular inter-layer bond strength enhancement percentages as recited in claims 1, 31 and 32, correspond to the ethylene content limitations which have been met by the invention taught by Isaka et al. Alternatively, the Examiner notes that Isaka et al teach a biaxially oriented, coextruded multilayer film comprising the same materials as instantly claimed, produced by the same method as the instant invention, and therefore appears to be substantially identical to the instantly claimed product and hence would inherently have the same properties as the instant invention.

5. Claims 1-2, 4, 6-12, and 27-32 are rejected under 35 U.S.C. 102(e) as anticipated by Peiffer et al (USPN 6,063,482.) As stated in the prior office action, Peiffer et al teach a biaxially oriented polypropylene film comprising a base ply essentially consisting of an isotactic propylene polymer having at least 90% by weight, in particular 98 to 100% by weight of propylene units and the corresponding comonomer content of not more than 10% by weight, or 0 to 2% by weight, ethylene (wherein 0 to 2% by weight encompasses the instantly claimed ranges of less than 1 weight percent, 0.05 to 0.8 wt%, 0.1 to 0.2wt%, and 0.5 to 0.7wt%; Abstract; 3:48-53.) In a preferred multilayer embodiment, the polypropylene film comprises at least one top ply or if necessary top plies on both sides, composed of polymers of α-olefinic polymers having 2 to 10 carbon atoms, such as propylene homopolymer, copolymer of ethylene and propylene, or terpolymer of ethylene and propylene and 1-butylene (which are inherently thermoplastic polymers; Col. 5:28-6:8.) Preferred embodiments of the polypropylene film according to the invention are three-ply wherein the structure, thickness and composition of a second top ply can be chosen independently of the top ply already present (6:46-52.) The thickness of the top ply or plies is generally greater than 0.1μm and is preferably in the range of 0.1 to 10μm (*which reads*

on "said surface layer has a thickness within the range of 0.3 microns to 80 microns" as in instant claim 2; Col. 6, lines 54-58.) The total thickness of the polypropylene film according to the invention may vary within wide limits and depends on the intended use but it is preferably 4 to 100 μm, with the base ply accounting for about 40 to 100% of the total film thickness (*which reads on a core layer within the range of 5 to 150 microns, and surface layers with a thickness less than said core as in instant claims 2 and 9*; Col. 7, lines 1-5.) Therefore, considering Peiffer et al teach a multilayer polyolefin film comprising a core layer of isotactic propylene polymer formed from propylene and up to 10wt% ethylene and preferably 0-2wt% ethylene, which encompasses the instantly claimed ranges, and a top ply or plies made from olefin polymers such as ethylene-propylene copolymers which are inherently thermoplastic polymers "capable of forming an effective heat seal with a corresponding thermoplastic polymer upon heating and compression", wherein the thickness of the film and the layers fall within the instantly claimed ranges, the invention taught by Peiffer et al anticipates the instantly claimed invention. With regards to the limitation "ethylene in an amount of no more than one weight percent **which is effective to provide an inter-layer bond strength with said surface layer...**" the Examiner takes the position that this limitation is met by the Peiffer et al teaching of a isotactic polypropylene with an ethylene content of 0-2wt% as discussed above, wherein the recitations with regards to the particular inter-layer bond strength enhancement percentages are descriptions of the ethylene content limitations which have been met by the invention taught by Peiffer et al. With regards to the limitation "a thermoplastic polymer capable of forming a heat seal with a corresponding thermoplastic polymer upon heating to an elevated temperature and compression", the Examiner takes the position that given Peiffer et al teach top plies formed from thermoplastic

polymers, particularly ethylene-propylene copolymer as utilized in the instant invention, the invention taught by Peiffer et al reads on the instantly claimed invention given that any thermoplastic material is "capable of forming a heat seal" to some degree with a second thermoplastic polymer wherein the second thermoplastic polymer is a heat-sealable material or a tie layer material. Alternatively, the Examiner notes that Peiffer et al teach a biaxially oriented, coextruded three-ply film comprising the same materials as instantly claimed, produced by the same method as the instant invention, and therefore, appears to be substantially identical to the instantly claimed product and hence would inherently have the same properties as the instant invention.

Claim Rejections - 35 USC § 103

6. Claims 1-2, 4, 6-12, and 27-32 are rejected under 35 U.S.C. 103(a) as obvious over Isaka et al (USPN 4,230,767) in view of Agarwal et al (USPN 5,795,946) and in further view of Lohmann et al (USPN 3,620,835.) The teachings of Isaka et al are discussed above. Though Isaka et al teach percentages of ethylene (*7% by weight or lower*) that encompass the instantly claimed ranges, Isaka et al does not specifically limit the invention to the instantly claimed ethylene content ranges, however, it is well known in the art that ethylene content in an isotactic propylene polymer is a result-effective variable as taught by Agarwal et al affecting the crystallinity of the resulting polymer and in turn the melting point, flexibility and optical properties of the polymer wherein the heat seal properties of a polymer are directly affected by the crystallinity and melting point of the polymer. Lohmann et al further teach that it is known in the art that interlayer adhesion of a homopolymeric isotactic polypropylene supporting film to

outer heat-sealing layers can be improved by modification of the isotactic propylene homopolymer by forming copolymers thereof or by adding copolymers or polyethylene thereto however at the expense of reduced optical qualities and slight changes in elastic modulus (Col. 1, lines 4-75.) Therefore, given that Isaka et al teach an ethylene content of 7wt% or less, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum percentage of ethylene in the isotactic propylene copolymer given that the ethylene content is a known result-effective variable as taught by Agarwal and Lohmann et al, affecting the crystallinity and melting point of the resulting copolymer which directly affects the adhesion and heat seal properties of the film.

7. Claims 1-2, 4, 6-12, and 27-32 are rejected under 35 U.S.C. 103(a) as obvious over Peiffer et al (USPN 6,063,482) in view of Agarwal et al (USPN 5,795,946) and in further view of Lohmann et al (USPN 3,620,835.) The teachings of Peiffer et al are discussed above. Though Peiffer et al teach percentages of ethylene (0-2wt%) utilized to produce the isotactic propylene polymer that encompass the instantly claimed ranges, Peiffer et al does not specifically limit the invention to the instantly claimed ethylene content ranges, however, it is well known in the art that ethylene content in an isotactic propylene polymer is a result-effective variable as taught by Agarwal et al affecting the crystallinity of the resulting polymer and in turn the melting point, flexibility and optical properties of the polymer wherein the heat seal properties of a polymer are directly affected by the crystallinity and melting point of the polymer. Lohmann et al further teach that it is known in the art that interlayer adhesion of a homopolymeric isotactic polypropylene supporting film to outer heat-sealing layers can be improved by modification of the isotactic propylene homopolymer by forming copolymers thereof or by adding copolymers or

polyethylene thereto however at the expense of reduced optical qualities and slight changes in elastic modulus (Col. 1, lines 4-75.) Therefore, given that Peiffer et al teach a preferred range of 0-2wt% ethylene, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum percentage of ethylene in the isotactic propylene copolymer given that the ethylene content is a known result-effective variable as taught by Agarwal and Lohmann et al, affecting the crystallinity and melting point of the resulting copolymer which directly affects the adhesion and heat seal properties of the film.

Response to Arguments

8. Applicant's arguments filed 7/10/02 have been considered but are not persuasive. The Applicant argues that the references do not recite an enhancement of interlayer bond strength as instantly claimed. However, as stated above, the Examiner takes the position that the recitations with regards to the particular inter-layer bond strength enhancement percentages as recited in claims 1, 31 and 32, are descriptions of the ethylene content limitations which have been met by the inventions of the cited prior art.. Alternatively, the Examiner notes that the prior art references teach a biaxially oriented, coextruded multilayer film comprising the same materials as instantly claimed, produced by the same method as the instant invention, and hence, would inherently provide a multilayer film having the same interlayer adhesion given that interlayer adhesion depends on the materials of the individual layers of the multilayer film and the method of forming the multilayer film. In response to Applicant's arguments regarding inherency, the Examiner refers the Applicant to MPEP 2112 regarding a prior art product appearing to be

substantially identical to the instant invention and requests the Applicant to prove or provide a showing that the prior art products do not necessarily or inherently possess the characteristics of the claimed product.

9. The Applicant further argues that Isaka et al does not teach biaxially orienting the entire film or forming the film by coextrusion, however, as discussed above, Isaka et al clearly teach that the multilayer film can be formed by coextrusion wherein the resulting coextruded composite film is biaxially oriented. The Applicant also argues that Peiffer et al does not teach or suggest that the film is heat sealable or has a heat sealability characteristic and does not teach a core layer comprising ethylene-propylene with an ethylene content of 1wt% or less. However, it is first noted that Peiffer et al clearly teach that the base ply or core layer comprises a propylene polymer containing at least 90% by weight, preferably 94 to 100% by weight, in particular 98 to 100% by weight, propylene and the corresponding comonomer, generally ethylene, in an amount of not more than 10% by weight or 0 to 6% by weight or 0 to 2% by weight, which encompasses the instantly claimed ranges, and further teaches that the film may be a three-ply film comprising polyolefin layers on either side of the propylene base ply. With regards to heat sealability, it is noted that the instantly claimed invention does not require the multilayer film to be heat sealable or comprise a heat seal layer. The instantly claimed invention only requires that the surface layer be formed of a thermoplastic polymer "capable of forming a heat seal with a corresponding thermoplastic polymer" wherein the specification states that ethylene-propylene is an example of a corresponding polymer. Hence, given that ethylene-propylene is a heat sealable material, the Examiner takes the position that any thermoplastic polymer is "capable of forming a heat seal" to some degree with a heat sealable thermoplastic

polymer such as ethylene-propylene copolymer or a tie layer thermoplastic polymer; or alternatively, any thermoplastic material is capable of forming a heat seal of some degree given that upon heating to a sufficiently high temperature, a thermoplastic material melts and re-solidifies to a seal upon cooling. Further, the Examiner notes that both Isaka et al and Peiffer et al clearly teach ethylene-propylene as a material suitable for the surface layer(s), which is the same material as utilized in the instant invention, and is therefore "capable of forming a heat seal with a corresponding thermoplastic polymer".

10. With regards to the combination of Agarwal et al, the Examiner notes that the Agarwal reference was relied upon to support the statement that the ethylene content in an isotactic propylene polymer is a known result-effective variable in the art and hence one would be motivated to utilize routine experimentation to optimize the amount of ethylene within the ranges taught by the primary references. The Examiner does not believe that the combinations with Agarwal et al teach away from the instant invention given that the primary references clearly teach ranges encompassing the instantly claimed ranges.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 703-308-0428. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Monique R. Jackson
Patent Examiner
Technology Center 1700
October 17, 2002